

**DEPARTMENT OF TRANSPORTATION****DIVISION OF ENGINEERING SERVICES**

Office of Structural Materials

Quality Assurance and Source Inspection



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Contract #: 04-0120F4Cty: SF/ALA Rte: 80 PM: 13.2/13.9File #: 1.28**WELDING INSPECTION REPORT****Resident Engineer:** Pursell, Gary**Address:** 333 Burma Road**City:** Oakland, CA 94607**Report No:** WIR-015673**Date Inspected:** 16-Jul-2010**Project Name:** SAS Superstructure**OSM Arrival Time:** 900**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**OSM Departure Time:** 1730**Contractor:** American Bridge/Fluor Enterprises, a JV**Location:** Job Site**CWI Name:** See Below**CWI Present:** Yes No**Inspected CWI report:** Yes No N/A**Rod Oven in Use:** Yes No N/A**Electrode to specification:** Yes No N/A**Weld Procedures Followed:** Yes No N/A**Qualified Welders:** Yes No N/A**Verified Joint Fit-up:** Yes No N/A**Approved Drawings:** Yes No N/A**Approved WPS:** Yes No N/A**Delayed / Cancelled:** Yes No N/A**Bridge No:** 34-0006**Component:** Orthotropic Box Girders**Summary of Items Observed:**

At the start of the shift the Quality Assurance Inspector (QAI) traveled to the project site and observed the following work performed by American Bridge/Fluor Enterprises (AB/F) personnel at the locations noted below:

- A). Field Splice W1/W2
- B). Field Splice W2/W3
- C). Miscellaneous Observations

**A). Field Splice W1/W2**

The QAI observed Jesse Cayabyab perform Magnetic Particle Testing (MPT) of the bottom plate field splice identified as WN: 1W-2W-D1 and D2. The testing was performed by the QC technician utilizing the MPT procedure identified as SE-MT-D1.5-CT-100 Rev.4. The QC technician utilized a Parker Contour Probe DA-400 and performed the test utilizing the longitudinal and transverse axis. No rejectable indications were noted by the QC technician. See QA Observation and Verification Summary regarding QAI UT verification.

**B). Field Splice W2/W3**

The QAI observed the Quality Control (QC) Inspector Tom Pasqualone check the DC amperage and voltage prior to the welder performing the actual production welding. The welder Xiao Jian Wan ID-9677 utilized a remnant of structural steel, 25mm x 75mm x 375mm, to perform this task. The QAI also observed the surface preparation which was ground to a bright metal and the U-shaped profile appeared to be in general compliance with the

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contract documents. At the conclusion of setting the predetermined parameters the welder commence the Flux Cored Arc Welding (FCAW-G) of the weld joint identified as Weld Number (WN) 2W-3W-B1 utilizing the Welding Procedure Specification (WPS) identified as ABF-WPS-D15-3110-3, Rev. 0. The WPS was also used by the QC inspector as a reference to monitor the welding and to verify the welding parameters which were observed and recorded by the QC inspector and verified by the QAI. The welding parameters were as follows: 225 amps, 21.5 volts with a travel speed measured as 190 mm per minute. The QC inspector also verified the minimum preheat temperature of 100 degrees Celsius and the maximum interpass temperature of 230 degrees Celsius. At the conclusion of the welding the preheat temperature was maintained for a time of three (3) hours. The welding was performed on the "B" face of the weld joint.

### C). Miscellaneous Observations

The QAI observed the machining of the weld profile surface on the "B" face of the bottom plate field splice identified as WN: 2W-3W-D. The machining was performed utilizing high cycle grinders to bring the weld surface into general compliance with the contract documents.

The QAI also observed the removal of the backing bar at the bottom plate field splice identified as WN: 3W-4W-D.

At conclusion of removing the backing bar the operator Rory Hogan commence the back gouging process utilizing the plasma arc cutting process. Mr. Hogan was assisted by Jeremy Dolman during the performance of this task.

The QAI observed the machining of the weld profile surface on the "B" face of the bottom plate field splice identified as WN: 3W-4W-F1. The machining was performed utilizing high cycle grinders to bring the weld surface into general compliance with the contract documents.

The above three (3) items is a continuation from the previous scheduled work day.

### QA Observation and Verification Summary

The QA inspector observed the QC activities and the welding of the field splices utilizing the WPS as noted above, which appeared to be posted at the weld station. The welding parameters and surface temperatures were verified by the QC inspector and utilizing a Fluke 337 clamp meter for the electrical welding parameters and a Fluke 63 IR Thermometer for verifying the preheat and interpass temperatures. The ESAB consumables utilized for the SMAW and the SAW processes appeared to comply with the AWS Specification and AWS Classification. The QC inspection, testing and welding performed on this shift appeared to be in general compliance with the contract documents. At random intervals, the QAI verified the QC inspection, testing, welding parameters and the surface temperatures utilizing various inspection equipment and gages which included a Fluke 337 Clamp Meter and Tempilstik Temperature indicators.

The QAI also performed a random magnetic particle verification test of the Complete Joint Penetration (CJP) groove weld identified as WN: 1W-2W-D1 and D2. A total area of approximately 10% was tested to verify the weld and testing by QC meet the requirements of the contract documents. The examination was performed utilizing the longitudinal and transverse axis and a magnetic particle test report, TL6028, was generated on this date.

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The digital photographs below illustrate the work observed during this scheduled shift.



### Summary of Conversations:

No pertinent conversations were discussed during this scheduled shift in regards to the project.

### Comments

This report is for the purpose of determining conformance with the contract documents and is not for the purpose of making repair or fit for purpose recommendations. Should you require recommendations concerning repairs or remedial efforts please contact Mohammad Fatemi (916) 813-3677, who represents the Office of Structural Materials for your project.

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**Inspected By:** Reyes,Danny

Quality Assurance Inspector

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**Reviewed By:** Levell,Bill

QA Reviewer